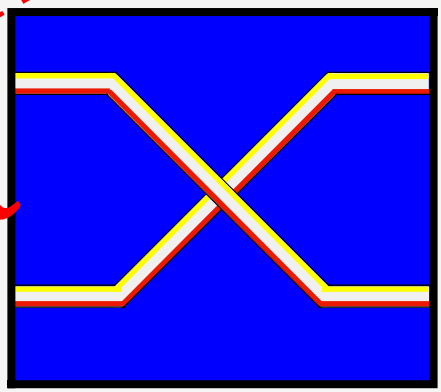
SPECTRUM Enterprise Manager

Device Management

SmartSwitch 2500, 6A000, 9A100

Preliminary Draft



Supports Management Module SM-CSI1085

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Contents

INTRODUCTION **5**

Purpose and Scope 5
Suggested Reading 5
Supported Devices....6
SmartSwitch 2500 7
SmartSwitch 6A000 Module 7
SmartSwitch 9A100 Module 7
Model Types 7

TASKS **9**

AAL5 VCC Performance (check) 9
Alarm Information (check)....9
ATM Heap Memory Status (check)....9
ATM Segment/Reassem Stats (check)....9
ATM Traffic Information (check)....9
ATM Traffic Parameters (create/modify)....9
ATM Virtual Channel Info (check) 9
Auto Detect (enable/disable)....9
Cell Transmission Stats (check) 9
Community Strings (authenticate)....10
DS3 PLCP Statistics (check) 10
Device Capacities/Thresholds (check)....10
Frame Transmission Stats (check) 10
FTP Information (check) 10
IISP Information (check) 10
ILMI Status Information (check) 10
Module Information (check) 10
Node PNNI Info (check)....10
Port/Interface Status (check/change)....10
Port Log Messages (check) 10
Port Transmission Statistics (check)....10
Port Address Info (check) 10
Signaling/Timer Information (check) 11
SNMP Trap Address (check/change) 11
SSCOP Configuration (check/change) 11
TC Alarm/Event Info (check)....11
VLAN Information (check)....11
Well Known Address (check)....11

PERFORMANCE VIEWS **12**

RoutingApp Performance View....13
MIB-IIApp Performance View....13
SwitchingApp Performance View....13

DEVICE TOPOLOGY VIEW **14**

Interface Icons 14
Icon Subviews Menu....16
Interface Detail View 17
Interface Status View 18
Interface Configuration View 18
Interface Address Translation Table View....19
Secondary Address View 19

Interface Threshold View 19

APPLICATION VIEW **20**

Routing Application 21
Protocol Comparison View 21
PNNI Application (PNNI_App) 22
Switch Application 22
Interface Views 23
Interface Configuration Table View 23
TC Sublayer Table View 24
DS3 PLCP Table View 25
Cross Connect Views 25
VC Cross Connect Table View 25
VP Cross Connect Table View 27
Links Views 28
Virtual Channel Link View 28
Virtual Path Link View 29
Traffic Parameter Table View 30
AAL5 VCC Table View 31
Switch/Heap Stats View 32
Segmentation and Reassembly Statistics View 32
Switch Views 34
Zeitnet System Information View 35
Zeitnet System Extensions View 36
Switch Configuration View 37
Module View 38
Port View 38
Port Traffic View 39
Alarm View 40
Alarm Configuration View 40
Signaling Timer Table View 41
Switch Application Information View 42
Log Table View 43
SSCOP Configuration Table View 44
IISP Table View 45
Signaling Views 45
AutoDetect Table 46
UNI Versions Table 46
Community Table 46
ILMI Status Table 47
VPI Table 47
VCI Table 47
Type and Side Table 47
Well Known Address Table 48
VCC Mask Table 48
SNMP Trap Community Table 48
VLAN Views 49
LEC Data Direct Connection View 50
LEC Statistics View 50
LEC Address Translation View 51
VLAN Traffic Descriptor View 51
LES Configuration View 52
BUS Configuration View 52

MODEL INFORMATION VIEW **53**

INDEX **54**

Introduction

This section identifies what you should understand about SPECTRUM and the devices before you use this document.

The following topics are covered in this section:

- Purpose and Scope (Page 5)
- Suggested Reading (Page 5)
- Supported Devices (Page 6)
- Model Types (Page 7).

Purpose and Scope

Use this document as a reference for SPECTRUM management module SM-CSI1085, which provides device management support for Cabletron's SmartSwitch 2500, 6A000 module, and 9A100 module. It also supports the Zeitnet ZX-250 switch, which is no longer in production and has been replaced by the SmartSwitch 2500.

Note: **This document supersedes the management module guide referred to as Zeitnet.**

You should use this document in conjunction with the other SPECTRUM documentation provided online at Cabletron's Website.

Suggested Reading

Before using this document, you must understand SPECTRUM's features, functions, and navigation techniques as described in the following documents:

- ***Getting Started with SPECTRUM for Operators***
- ***Getting Started with SPECTRUM for Administrators***
- ***How to Manager Your Networks with SPECTRUM***
- ***SPECTRUM Views***
- ***SPECTRUM Menus***
- ***SPECTRUM Icons***

Supported Devices

This document supports device management of the following Cabletron devices.

- SmartSwitch 2500 (Page 7), which replaces the Zeitnet ZX-250.
- SmartSwitch 6A000 Module (Page 7) is an ATM switch module that operates within the SmartSwitch 6000 chassis to give it cell switching capabilities.
- SmartSwitch 9A100 Module (Page 7) is an ATM switch module that operates within the SmartSwitch 9000 chassis to give it cell switching capabilities.

Note: **For simplicity, the ZX-250, 2500, 6A000, and 9A100 switches are referred to as the "devices."**

Physically, the devices can accept one or more optional Input/Output Modules (IOMs). The IOMs provide different port and trunk interfaces covering a variety of line rates and connector types. The SmartSwitch 6A000 and 9A100 share common IOMs. Although the SmartSwitch 2500 IOMs are of a different size, they provide the same functionality as the IOMs for the 6A000 and 9A100 devices.

In terms of signaling, all of the devices provide UNI signaling, ATM Forum PNNI network routing, and IISP compatible static routing (allowing them to interoperate with legacy ATM switches that do not support PNNI routing).

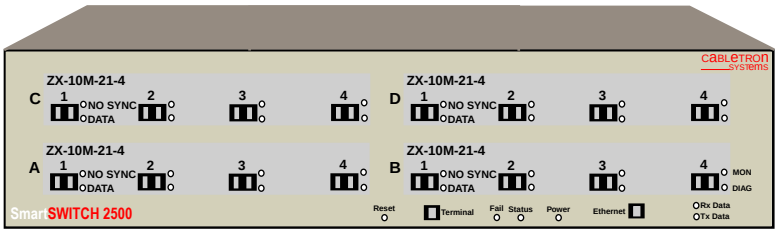
The devices support the MIBs listed below. (Refer to your device documentation for the latest MIBs.)

- ATM
- ATM2
- ATM TC
- BUS
- Zeitnet IISP
- Zeitnet Switch
- Zeitnet Common
- Zeitnet IPATM
- Zeitnet LE
- Zeitnet Switch Trap
- ATM Forum
- ATM Forum Addr Reg
- ATM Forum Srvc Reg
- LANE/ELAN
- LES

SmartSwitch 2500

This 2.5 Gbps standalone ATM switch can include a family of IOMs to provide a range of connectivity options. This device is designed for LAN backbone networks and workgroup and desktop applications. Figure 1 illustrates a SmartSwitch 2500 chassis with four ZX-IOM-21-4 IOMs installed. This provides the SmartSwitch 2500 with 16 MMF/SC, 155 Mbps, OC-3c/STM-1 ports.

Figure 1: SmartSwitch 2500



SmartSwitch 6A000 Module

This 2.5 Gbps ATM switch module installs in the SmartSwitch 6000 chassis to provide features comparible to the SmartSwitch 2500 switch. The 6A000 can provide up to 15 ports at 155 Mbps and three at 622 Mbps.

SmartSwitch 9A100 Module

This 2.5 Gbps ATM switch module installs in the SmartSwitch 9000 chassis to provide features comparible to the SmartSwitch 2500 switch. The 9A100 has four IOM slots, which can provide up 16 ports of OC3 connectivity.

Model Types

ZX_250, SS2500, 6A000, and 9A100 are the model types for the devices.

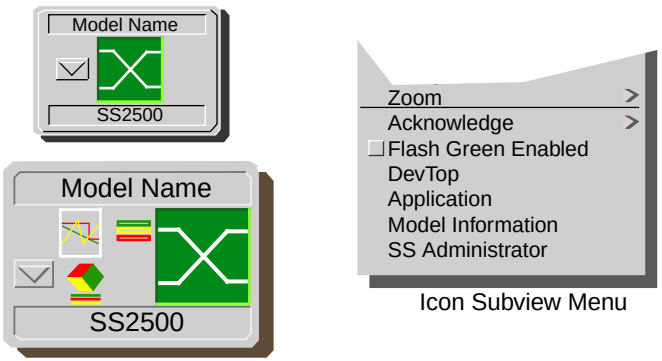
Note:

The ZX_250 and SS2500 model types are functionally the same. ZX_250 has been maintained only for the convenience of ZX-250 users. If a ZX-250 device is modeled by IP or through discovery, the SS2500 model type will be created by default. ZX-250 users may create the ZX_250 model type manually if desired.

Modeling results in the creation of Device icons that represent the devices and their supported applications. These icons contain double-click zones and provide access to Icon Subviews menus that let you access device management information.

Figure 2 shows an example of the Device icons and Icon Subviews menus available for the devices.

Figure 2: Sample Device Icons



Note:

The ZX_250, SS2500, and 6A000 models do not provide Interface or Chassis Device views. Get interface data for these models via the Interface icons in the Device Topology view.

The Device icons for these models do not provide access to Configuration views. Obtain configuration data via the Interface icons in the DevTop view or the Application icons in the Application view.

Tasks

This section provides an alphabetical list of references to information associated with device management and troubleshooting tasks.

AAL5 VCC Performance (check)

- AAL5 VCC Table View (Page 31)

Alarm Information (check)

- Alarm View (Page 40)
- Alarm Configuration View (Page 40)

ATM Heap Memory Status (check)

- Switch/Heap Stats View (Page 32)

ATM Segment/Reassem Stats (check)

- Segmentation and Reassembly Statistics View (Page 32)

ATM Traffic Information (check)

- Port View (Page 38)
- Port Traffic View (Page 39)
- Switch Application Information View (Page 42)

ATM Traffic Parameters (create/modify)

- Traffic Parameter Table View (Page 30)

ATM Virtual Channel Info (check)

- Interface Configuration Table View (Page 23)
- Cross Connect Views (Page 25)
- Links Views (Page 28)
- Signaling Views (Page 45)

Auto Detect (enable/disable)

- AutoDetect Table (Page 46)

Cell Transmission Stats (check)

- SwitchingApp Performance View (Page 13)

Community Strings (authenticate)

- Community Table (Page 46)

DS3 PLCP Statistics (check)

- DS3 PLCP Table View (Page 25)

Device Capacities/Thresholds (check)

- Zeitnet System Information View (Page 35)
- Zeitnet System Extensions View (Page 36)

Frame Transmission Stats (check)

- RoutingApp Performance View (Page 13)
- MIB-IIApp Performance View (Page 13)

FTP Information (check)

- Switch Configuration View (Page 37)

IISP Information (check)

- IISP Table View (Page 45)

ILMI Status Information (check)

- ILMI Status Table (Page 47)

Module Information (check)

- Module View (Page 38)

Node PNNI Info (check)

- PNNI Application (PNNI_App) (Page 22)

Port/Interface Status (check/change)

- Interface Icon in the DevTop View (Page 15)
- Interface Status View (Page 18)
- Interface Configuration View (Page 18)
- Interface Threshold View (Page 19)

Port Log Messages (check)

- Log Table View (Page 43)

Port Transmission Statistics (check)

- Interface Detail View (Page 17)

Port Address Info (check)

- Interface Address Translation Table View (Page 19)
- Secondary Address View (Page 19)

Signaling/Timer Information (check)

- Signaling Timer Table View (Page 41)
- Signaling Views (Page 45)

SNMP Trap Address (check/change)

SNMP Trap Community Table (Page 48)

SSCOP Configuration (check/change)

- SSCOP Configuration Table View (Page 44)

TC Alarm/Event Info (check)

- TC Sublayer Table View (Page 24)

VLAN Information (check)

- VLAN Views (Page 49)

Well Known Address (check)

- Well Known Address Table (Page 48)

Performance Views

This section describes the Performance views available for the devices.

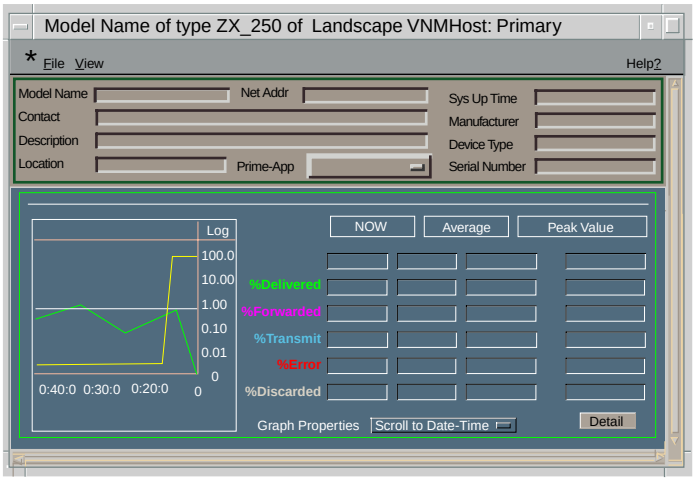
These views display statistical information about device and port operation. The basic layout and function of the Performance views are the same for all SPECTRUM model types. A sample Performance view is shown in Figure 3. Refer to ***SPECTRUM Views*** for a detailed description of the view.

The devices provide the following Performance views:

- RoutingApp Performance View (Page 13)
- SwitchingApp Performance View (Page 13)
- MIB-IIApp Performance View (Page 13)

The statistical attributes (frame rates, cell rates, etc.) displayed by the Performance views depend upon the model type and specific Performance view displayed. The following paragraphs list the statistical attributes displayed by each of these views.

Figure 3: Sample Performance View



RoutingApp Performance View

Access this view from the RoutingApp Icon Subviews menu by selecting **Performance**.

This view provides current and historical frame transmission statistics for the routing interface. Statistics are provided for the following attributes:

- Frame Rate
- % Delivered
- % Forwarded
- % Transmit
- % Error
- % Discarded

MIB-IIApp Performance View

Access this view from the MIB-IIApp Icon Subviews menu by selecting **Performance**.

This view provides current and historical frame transmission statistics for the MIB-II interface. Statistics are provided for the following attributes:

- Frame Rate
- % Received
- % Transmitted
- % Error
- % Discarded

SwitchingApp Performance View

Access this view from the SwitchingApp Icon Subviews menu by selecting **Performance**.

This view provides current and historical cell transmission statistics for the interface with the ATM network. Statistics are provided for the following attributes:

- In Load
- In Cell Rate
- Error Rate
- Out Load
- Out Cell Rate
- % Discard

Device Topology View

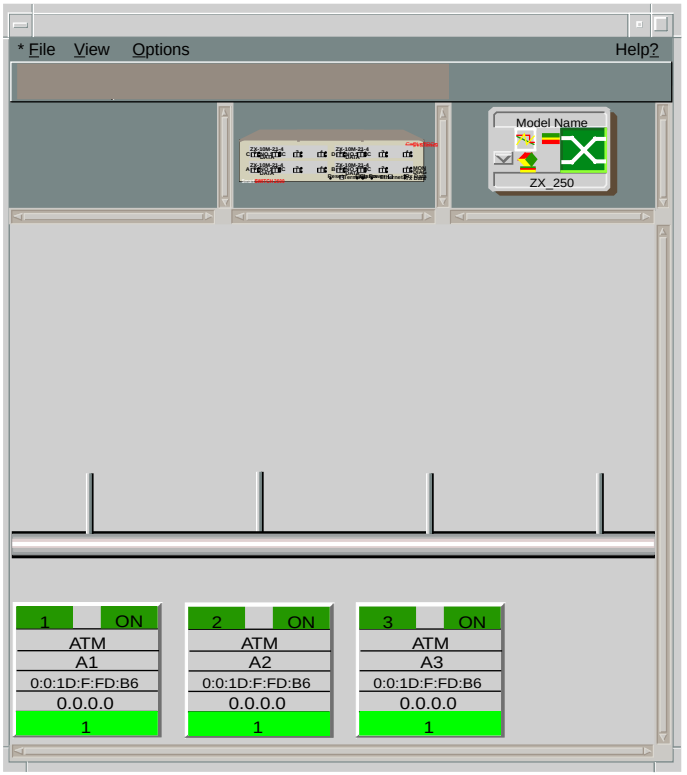
This section describes the Device Topology view, which displays icons representing the device, its ports or interfaces, and other connected devices and LANs.

Figure 4 shows a sample Device Topology view. This view provides access to other views (Performance, Application, etc.) from the large Device icon and it lets you examine existing connections and get operation and configuration status information from the Interface icons.

This section covers the following topics:

- Interface Icons (Page 14)
- Icon Subviews Menu (Page 16)

Figure 4: Sample Device Topology View



Interface Icons

These icons represent the interfaces of the device. They identify the type of interface or port and provide status information. Figure 5 shows an example of an Interface icon, its Icon Subviews menu, and its labels and double-click zones.

The callouts (a) through (g) displayed in the illustration identify the label and, if available, the view to which it provides double-click access. For example, the icon area referred to by callout (b) displays the administrative status and provides double-click access to the Interface Status view. The menu displayed in the illustration is the Icon Subviews menu for that Interface icon.

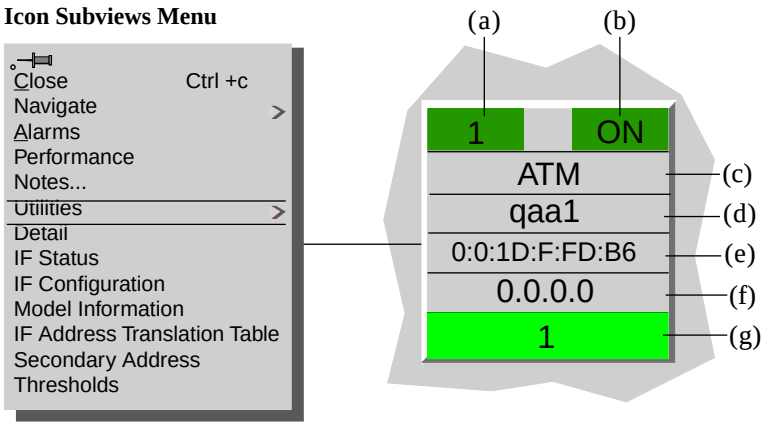
Interface Label
This label displays the interface (port) number.

Administrative Status Label
This label displays the status of this interface for the primary application selected (Routing, MIB-II, etc.). The possible states are ON (Green), OFF (Blue), and Testing (Red). Double-click this label to open the Interface Status View (Page 18).

Interface Type Label
This label displays the interface type. All of the devices display Other as the interface type. Double-click this label to open the Interface Configuration View (Page 18).

Description Label
This label displays the type of port signaling. This information is also displayed in the **Description** field of the Model Information view. Double-click this label to open the Model Information view (described in ***SPECTRUM Views***).

Figure 5: Interface Icon in the DevTop View



(a) Interface Label

(b) Administrative Status Label/IF Status View

(c) Interface Type Label/IF Configuration View

(d) Description Label/Model Information View

(e) MAC Address Label/IF Address Translation Table View

(f) Address Label/ Secondary Address Panel

(g) Gauge Label/ Performance View

MAC Address Label
This label displays the address of the device interface. Double-click this label to open the Interface Address Translation Table View (Page 19).

Address Label

This label displays the address or mask. The default is the address. Double-click this label to open the Secondary Address View (Page 19).

To change this label's display, do the following:

1. Double-click the label to open the Secondary Address view.
2. Select the address you wish to display and click **OK**.

Gauge Label

This label displays the performance statistic determined by the Gauge Control Panel for this interface. Double-click this label to open the Performance view.

Icon Subviews Menu

Table 1 lists the device-specific Interface icon subviews menu selections. The following paragraphs describe the views that are accessible from the Icon Subviews menu and via double-click zones on the Interface icon (see Figure 5).

Table 1: Interface Icon Subviews Menu

Menu Selection	Opens the...
Detail	Interface Detail View (Page 17).
IF Status	Interface Status View (Page 18).
IF Configuration	Interface Configuration View (Page 18).
Model Information	Model Information view described in ***SPECTRUM Views***.
IF Address Translation Table	Interface Address Translation Table View (Page 19).
Secondary Address Panel	Secondary Address View (Page 19).
Thresholds	Interface Threshold View (Page 19).

Interface Detail View

This view provides color-coded pie charts that display transmission statistics for the selected interface. Three buttons at the bottom of each pie chart select the way in which the data is represented (**Total**, **Delta**, **Accum**). Another button, **Clear**, works in conjunction with the **Accum** button. For more information on pie charts and the use of these buttons, refer to the ***SPECTRUM Views***. Table 2, Table 3, and Table 4 list the information provided by these pie charts.

Table 2: Packet Breakdown

Statistic	Definition
Delivered	Packets delivered to a higher level protocol.
Transmitted	Packets transmitted.
Errors	Packets received containing errors.
Discards	Packets discarded.

Table 3: Error Breakdown

Statistic	Definition
In Errors	The total number of ICMP messages that the SNMP device received or attempted to transmit containing errors.
Out Errors	The total number of ICMP messages that the SNMP device did not transmit because of errors.

Table 4: Discard Breakdown

Statistic	Definition
Unknown	Unknown packet types received.
In No Resource	Received packets discarded, even though no errors were encountered to prevent their continued processing. Such packets may have been discarded to increase buffer space.
Out No Resource	Transmitted packets discarded, even though no errors were encountered to prevent their continued processing. Such packets may have been discarded to increase buffer space.

Interface Status View

This view provides the following information for the selected interface:

Operational Status
A read-only indicator displaying the current operational state of the interface. The possible states are **ON**, **OFF**, **Testing**, and **Default**.

Administrative Status
A drop-down menu button that lets you select the operational state of the interface. The possible states are **ON**, **OFF**, **Testing**, and **Default**.

Interface Configuration View

This view displays the following information for the selected interface:

Operation Status
A read-only indicator that shows the current operational state of the port (**ON**, **OFF**, **Testing**, or **Default**).

Admin. Status
A drop-down menu button that lets you select the operational state of the port (**ON**, **OFF**, or **Testing**). This can be seen on the Administrative Status Label.

Description
The description of the interface.

Network Name/Address
The network name and IP address of the interface.

Physical Address
The physical (MAC) address of the port.

Bandwidth
The estimated bandwidth of the interface measured in bits per second. For interfaces that do not vary in bandwidth or for which no accurate estimate can be made, a nominal bandwidth is provided.

Packet Size
The size of the packets being transmitted or received.

Interface Address Translation Table View

This view displays the following information for the selected interface:

Interface Index
The value identifying the port.

Physical Address
The physical (MAC) address of the port.

Secondary Address View

This view displays the IP and mask addresses of the interfaces.

Interface Threshold View

This view displays the following information for the selected interface:

Load Threshold
The value you set to establish the point at which a load alarm will be turned on and off.

Packet Rate Threshold
The value you set to establish the point at which a packet transmission alarm will be turned on and off.

Error Rate Threshold
The value you set to establish the point at which an error alarm will be turned on and off.

% Discarded Threshold
The value you set to establish the point at which an alarm will be turned on and off.

Application View

This section describes the Application view and the MIB information available from the device-specific Application icons it contains.

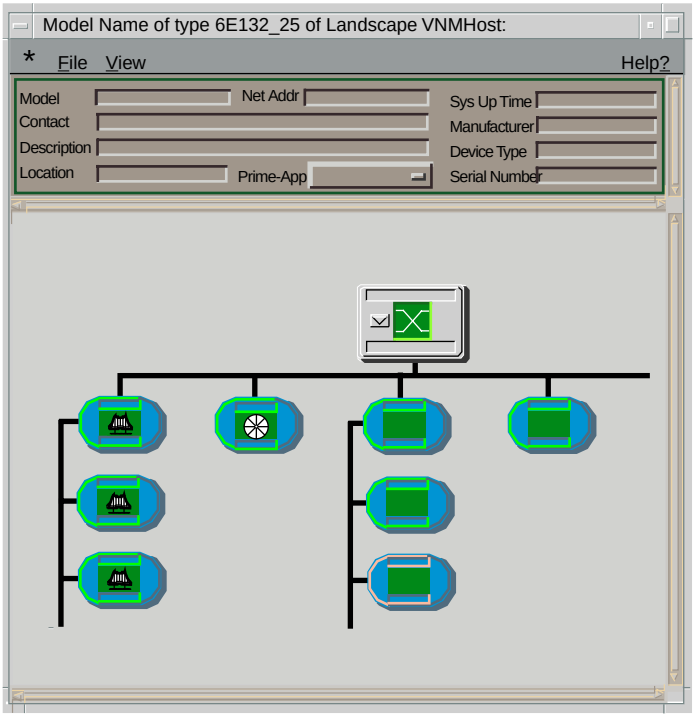
Figure 6 shows a sample Applications view in the Icon mode, which displays the applications as icons. The List mode displays the applications as text labels. To change the display mode, select **View > Mode > List** or **Icon**.

The icons (and text labels) represent applications supported by the device. These applications are associated with the IP address used to model the device in SPECTRUM. What applications are available depends upon the device configuration.

The following applications are common to all SPECTRUM model types. Refer to the related SPECTRUM application documentation.

- GenRtrApp
- IP2RtrApp
- SNMP2_Agent
- ICMP_App
- System2_App
- TCP2_App
- UDP2_App

Figure 6: Sample Application View



Listed below are the applications described in this document.

- Routing Application (Page 21) provides IP routing traffic statistics.
- IP Routing Application provides access to IP configuration information, transmission routes tables, address tables, fragmentation statistics, and reassembly statistics. Refer to ***MIB-II Applications***.
- PNNI Application (PNNI_App) (Page 22) provides PNNI node configuration information via the Node Configuration Table.
- Switch Application (Page 22) accesses views covering interfaces, cross connects, links, traffic parameters, AAL5 VCC performance, device operational status, IISP routes, signaling, and VLAN configuration.

Note:

Several of the views in this section contain color-coded pie charts that display statistics. Refer to *SPECTRUM Views* for more information on pie charts. Other views contain Sort, Find, and Update buttons, which permit you to update a table and quickly find information.

Routing Application

Table 5 describes the Icon Subviews selections for this application.

Table 5: Icon Subviews Menu Selections

Selection	Opens the...
Model Information	Model Information view described in ***SPECTRUM Views***
Protocol Comparison	Protocol Comparison view described below

Protocol Comparison View

This view displays a breakdown of IP Routing traffic statistics from each routing application being monitored by the Routing Application through the “Provides” relation. Statistics are provided for Frames Forwarded, Frames Delivered, and Frames Transmitted.

PNNI Application (PNNI_App)

This application provides access to the Node Configuration Table, which provides the following fields.

Index
The numerical sequence of the node.

Node Level
The PNNI level of the node.

Admin Status
The status of the node (Up or Down)

Peer Group Identification
A unique number identifying the peer group.

Node Identification
A unique number identifying the node.

Switch Application

The model type name for this application is SwitchingApp. Table 6 describes the Icon Subviews and mouse Pop-up Navigator menu selections for this application.

Table 6: SwitchingApp Icon Subviews Menu Selections

Selection	Accesses the...
Interface	Three views that provide interface configuration, TC sublayer, and DS3 PLCP information. See Interface Views (Page 23).
Cross Connect	Two views that provide virtual channel and virtual path connection information. See Cross Connect Views (Page 25).
Links	Two views that provide virtual channel and virtual path link information. See Links Views (Page 28).
Traffic Parameter	Traffic Parameter Table View (Page 30), which provides traffic parameter, quality of service, and status information.
AAL5 VCC Performance	AAL5 VCC Table View (Page 31), which provides AAL5 VCC error, timeout, and oversized Service Data Unit information.
Switch Memory/Heap Stats	Switch/Heap Stats View (Page 32), which provides memory size information.
SAR Stats	Segmentation and Reassembly Statistics View (Page 32), which provides statistics concerning packet segmentation and reassembly.

Table 6: SwitchingApp Icon Subviews Menu Selections (Continued)

CAC Stats	Connection Admission Control (CAC) Policy Statistics view, which is not supported in this release. The view may appear in a red box. It will provide carrier access code information.
Switch	Two views of device configuration, signaling, traffic, and alarms information. See Switch Views (Page 34).
IISP Route	IISP Table View (Page 45), which provides Image and Information Standards Policy configuration and status information.
Signaling	Ten views of auto detection, UNI versions, SNMP community, ILMI, free VPIs and VCIs, Well Known addressing, and VCC mask information. See Signaling Views (Page 45).
VLAN	Six views related to LAN Emulation Clients (LECs), LAN Emulation Servers (LESs), traffic, and bus configuration. See VLAN Views (Page 49).

Interface Views

Table 7 describes each of the views available via the **Interface** selection on the Switching Application Icon Subviews menu.

Table 7: Interface Selections and Views

Menu Selection	Opens the ...
Configuration	Interface Configuration Table view described below.
TC Sublayer	TC Sublayer Table View (Page 24).
DS3 PLCP	DS3 PLCP Table View (Page 25).

Interface Configuration Table View

This view contains a table listing the local interface configuration parameters for each ATM interface or port. This table provides the following information:

Max VCCs

The maximum number of VCCs (PVC and SVC) supported by this ATM interface.

Conf VPCs

The number of VPCs currently in use on this ATM interface. This includes the number of PVCs and SPVCs that are configured at the interface plus

the number of SVCs that are currently established at the interface.

Conf VCCs
The number of VCCs currently in use on this ATM interface. This includes the number of PVCs and SPVCs that are configured at the interface plus the number of SVCs that are currently established at the interface.

Max VPI Bits
The maximum number of active VPI bits configured for use at the ATM interface.

Max VCI Bits
The maximum number of active VCI bits configured for use at the ATM interface.

ILMI VPI
The VPI value of the VCC supporting the ILMI at the ATM interface. If this value and the value of ILMI VCI are both zero, then ILMI is not supported on this interface.

ILMI VCI
The VCI value of the VCC supporting the ILMI at the ATM interface. If this value and the value of ILMI VPI are both zero, then ILMI is not supported on this interface.

Address Type
The type of ATM address.

Admin Address
An address assigned for administrative purposes, e.g., an address associated with the service provider side of a public network UNI.

Neighbor Address
The IP address of the neighbor system connected to the far end of this interface to which an NMS can send SNMP messages.

Neighbor If Name
The textual name of the interface of the neighbor defined in the **Neighbor Address** field.

TC Sublayer Table View

This view provides TC sublayer alarm and event information. The view contains the following information:

IF Index
The interface number.

OCD Events
The number of times the Out of Cell Delineation (OCD) events occur. An OCD event occurs when seven consecutive ATM cells have Header Error Control (HEC) violations. A high number of OCD events may indicate a problem with the TC sublayer.

TC Alarm State
Indicates if there is an alarm present for the TC sublayer. The **Failure** value indicates that a Loss of Cell Delineation (LCD) failure state has been declared for the TC sublayer. Transition from **Failure** to **No Alarm** occurs when six consecutive ATM cells are received with a valid HEC, followed by about 10 seconds of acceptable working signal.

DS3 PLCP Table View
This view provides Physical Layer Convergence Protocol (PLCP) statistics in the following fields.

IF Index
The interface number.

SEFSs
The number of DS3 PLCP SEFSs (Severely Errored Framing Seconds). Each SEFS represents a one-second interval that contains one or more severely errored frame events.

Alarm State
Indicates whether the DS3 PLCP has received an incoming alarm (yellow) signal. The value **IncomingLOF** means that the DS3 PLCP has declared a Loss of Frame (LOF) failure condition. The value **No Alarm** means that there are no alarms present. The transition from an LOF failure to a no alarm state occurs when no defect has been received for more than 10 seconds.

UASs
The counter associated with the number of “Unavailable Seconds” encountered by the PLCP.

Cross Connect Views
Table 8 describes each of the views available via the **Cross Connect** selection on the Switching Application Icon Subviews menu.

Table 8: Cross Connect Selections and Views

Menu Selection	Opens the...
Virtual Channels	VC Cross Connect Table view (described below).
Virtual Paths	VP Cross Connect Table View (Page 27).

VC Cross Connect Table View
This view provides a table of virtual channel connection and configuration information. The table provides the following information:

Index
The unique value to identify this VC cross-connect.

Low Index
The value equal to the If Index value of the ATM interface for this VC cross-connect.

Low VPI
The value equal to the VPI value at the ATM interface associated with the VC cross-connect that is identified by Low Index.

Low VCI
The value equal to the VCI value at the ATM interface associated with this VC cross-connect that is identified by Cross Connect Low If Index.

High Index
The value equal to the If Index value for the ATM interface for this VC cross-connect.

High VPI
The value equal to the VPI value at the ATM interface associated with the VC cross-connect that is identified by Cross Connect High If Index.

High VCI
The value equal to the VCI value at the ATM interface associated with the VC cross-connect that is identified by Cross Connect High If Index.

Admin Status
Identifies the desired administrative status of this bi-directional VC cross-connect. The “Up” and “Down” states indicate respectively that the traffic flow is enabled or disabled on this VC cross-connect.

L2H Oper Status
Identifies the current operational status (**Up** or **Unknown**) of the VC cross-connect in one direction (i.e., from the low to high direction).

H2L Oper Status
Identifies the current operational status of the VC cross-connect in one direction (i.e., from the high to low direction). The “Up”state indicates that this ATM VC cross-connect from the high to low direction is operational. The “Unknown” state indicates that the state cannot be determined.

L2H Last Change
The value of **Sys Up Time** (located in the Banner area of the view) at the time this VC cross-connect entered its current operational state in the low to high direction. If the current state was entered prior to the last re-initialization of the agent, the value is zero.

H2L Last Change
The value of **Sys Up Time** at the time this VC cross-connect entered its current operational state in the high to low direction. If the current state was entered prior to the last re-initialization of the agent, the value is zero.

Row Status
The status of this entry in the Cross Connect Table. This is used to create new cross-connects for cross-connecting VCLs that are created using the VCL Table or to change and delete existing cross-connects.

VP Cross Connect Table View

This view provides a table of virtual paths connection and configuration information. The table provides the following information:

Index
The unique value to identify this VP cross-connect.

Low Index
The value equal to the If Index value of the ATM interface for this VP cross-connect.

Low Vpi
The value equal to the VPI value at the ATM interface associated with the VP cross-connect that is identified by Low Index.

High Index
The value equal to the If Index value of the ATM interface for this VP cross-connect. The term “high” implies that this ATM interface has the numerically higher If Index value than the other ATM interface identified in the same cross-connect entry.

High Vpi
The value equal to the VPI value at the ATM interface associated with the VP cross-connect that is identified by High Index.

Admin Status
Identifies the desired administrative status of this bi-directional VP cross-connect. The “Up” state indicates that the traffic flow is enabled on this VP cross-connect.

L2H Oper Status
Identifies the current operational status (**Up** or **Unknown**) of the VP cross-connect in one direction (i.e., from the low to high direction).

H2L Oper Status
Identifies the current operational status (**Up** or **Unknown**) of the VP cross-connect in one direction (i.e., from the high to low direction).

L2H Last Change
The value of **Sys Up Time** at the time this VP cross-connect entered its current operational state in the low to high direction. If the current state was entered prior to the last re-initialization of the agent, the value is zero.

H2L Last Change
The value of **Sys Up Time** at the time this VP cross-connect entered its current operational state in the high to low direction. If the current state was entered prior to the last re-initialization of the agent, the value is zero.

Row Status
The status of this entry in the Cross Connect Table. This is used to create cross-connects for cross-connecting VPLs that are created using the VPL Table or to change and delete existing cross-connects.

Links Views

Table 9 describes each of the views available via the **Links** selection on the Switching Application Icon Subviews menu.

Table 9: Links Selections and Views

Menu Selection	Opens the...
Virtual Channels	Virtual Channel Link view described below.
Virtual Paths	Virtual Path Link View (Page 29).

Virtual Channel Link View

This view provides a table of configuration information for the Virtual Channel Links (VCLs). The table provides the following information:

IF Index
The interface number

VPI
The VPI value of the VCL.

VCI
The VCI value of the VCL.

Admin Status
Implemented only for a VCL that terminates a VCC (i.e., one that is not cross-connected to other VCLs). Its value specifies the desired administrative state of the VCL. The Up and Down states indicate respectively that the traffic flow is enabled or disabled for this VCL.

Oper Status
The current operational status of the VCL. The Up and Down states indicate respectively that the VCL is currently operational or not operational. The Unknown state indicates that the status of this VCL cannot be determined.

Last Change
The value of **Sys Up Time** at the time this VCL entered its current operational state. If the

current state was entered prior to the last re-initialization of the agent, the value is zero.

Rcv Descr Index
Identifies the row in the ATM Traffic Descriptor Table that applies to the receive direction of this VCL.

Xmit Descr Index
Identifies the row of the ATM Traffic Descriptor Table that applies to the transmit direction of this VCL.

Cross Connect Id
Implemented only for a VCL that is cross-connected to other VCLs that belong to the same VCC. All such VCLs have the same value, which is reflected in the VC Cross Connect Table View (Page 25).

Row Status
Used to create, delete, or modify a row in this table. To create a new VCL, this object is initially set to createAndWait or createAndGo.

AAL Type
The AAL type as follows: Other = not defined; aal1 = AAL Type 1; aal34 = AAL Type 3/4;aal5 = AAL Type 5; user defined = User Defined.

Transmit Size
The maximum size, in octets, that is supported in the transmit direction.

Receive Size
The maximum size, in octets, that is supported in the receive direction.

Encaps Type
The type of data encapsulation used.

Virtual Path Link View

This view provides a table of configuration information for the virtual path links. The table provides the following information:

IF Index
The interface number

VPI
The VPI value of the Virtual Path Link (VPL). Note that a VPI value of zero is not used for a VPL not associated with a VCL. The maximum VPI value cannot exceed the value allowable by the interface's maximum VPI.

Admin Status
Implemented only for a VPL that terminates a VPC (i.e., one that is not cross-connected to other VPLs). Its value specifies the desired administrative state of the VPL. The Up and Down

states indicate respectively that the traffic flow is enabled or disabled for this VPL.

Oper Status
The current operational status of the VPL. The Up and Down states indicate respectively that the VPL is currently operational or not operational. The “Unknown” state indicates that the status of this VPL cannot be determined.

Last Change
The value of **Sys Up Time** at the time this VPL entered its current operational state. If the current state was entered prior to the last re-initialization of the agent, the value is zero.

Rcv Descr Index
Identifies the row in the Traffic Parameter Table that applies to the receive direction of the VPL.

Xmit Descr Index
Identifies the row in the Traffic Parameter Table that applies to the transmit direction of the VPL.

Cross Connect Id
Implemented only for a VPL that is cross-connected to other VPLs that belong to the same VPC. All such VPLs have the same value, which is reflected in the VP Cross Connect Table.

Row Status
Used to create, delete, or modify a row in this table. To create a new VCL, this object is initially set to createAndWait or createAndGo.

Traffic Parameter Table View

This view is available via the **Traffic Parameter** selection on the Switching Application Icon Subview menu. The view allows you to create and modify traffic parameters or descriptors. The table provides the following information:

Index
Used by the Virtual Link Table (VPL or VCL Table) to identify the row of this table.

Descr Type
The type of ATM traffic descriptor. The type may indicate no traffic descriptor or a traffic descriptor with one or more parameters. These parameters are specified as a parameter vector in the corresponding instances of Param 1, Param 2, Param 3, Param 4, and Param 5.

Param 1
The first parameter of the ATM traffic descriptor used according to the value of **Descr Type.**

Param 2
The second parameter of the ATM traffic descriptor used according to the value of **Descr Type**.

Param 3
The third parameter of the ATM traffic descriptor used according to the value of **Descr Type**.

Param 4
The fourth parameter of the ATM traffic descriptor used according to the value of **Descr Type**.

Param 5
The fifth parameter of the ATM traffic descriptor used according to the value of **Descr Type**.

QoS Class
The Quality of Service class. Four QoS classes have been specified in the ATM Forum UNI Specification: Service Class A, Constant Bit Rate, used for video and circuit emulation; Service Class B, Variable Bit Rate, used for video and audio; Service Class C, used for connection-oriented data transmission; and Service Class D, used for connectionless data transmission. Four QoS values (1, 2, 3, and 4) are specified for QoS Classes A, B, C, and D, respectively. An unspecified QoS (value 0) is used for “best-effort” traffic.

Row Status
Used to specify the state of the row in this table. The possible states are **Active**, **Not in service**, **Not ready**, **Create and go**, **Create and wait**, and **Destroy**.

AAL5 VCC Table View

This view is available via the **AAL5 VCC Performance** selection on the Switching Application Icon Subviews menu. The view displays the following AAL5 VCC performance parameters:

If Index
The interface definition.

VPI
The VPI value of the AAL5 VCC at the interface identified by **If Index**.

VCI
The VCI value of the AAL5 VCC at the interface identified by **If Index**.

Errors
The number of AAL5 CPCS PDUs received with CRC-32 errors on this AAL5 VCC at the interface associated with an AAL5 entity.

Time Outs
The number of partially reassembled AAL5 CPCS PDUs that were discarded on this AAL5 VCC at the interface associated with an AAL5 entity because they were not fully reassembled within the required time period. If the reassembly timer is not supported, the value is zero.

Over Sized SDUs
The number of AAL5 CPCS PDUs discarded on this AAL5 VCC at the interface associated with an AAL5 entity because the AAL5 SDUs were too large.

Switch/Heap Stats View

This view provides the following fields concerning the Heap memory status.

Cell Memory Size
The total cell memory size in bytes.

Common Dram Memory Size
The size of the Common Dram installed in megabytes.

Free Heap Size
Percentage of free Heap memory.

Used Heap Size
The size of the Heap in use.

Sar Control Mem Size
Size of the Segmentation and Reassembly control memory in kilobytes.

Cpu Dram Mem Size
Size of the CPU Dram in megabytes.

Total Heap Size
Size of the total Heap memory configured.

Segmentation and Reassembly Statistics View

This view provides Segmentation and Reassembly (SAR) transmission and error statistics related to the SAR driver in the following read-only fields.

Pkts Dropped
Total number of packets dropped.

Bytes Cmp
Number of bytes that completed transmission.

Pkts Cmp
Number of packets that completed transmission.

Pkts Qd
Number of packets queued for transmission.

Total Errors
Total number of errors received.

T1 Errors
Total number of T1 errors received.

Rcr Int
Total number of times the Raw Cell Received interrupt was received.

Rd Int
Number of times the receiver was deactivated.

Pl Int
Number of times the physical layer chip generated an interrupt, such as when a cable is pulled out.

Cpe Int
Number of times the control memory parity error interrupt was received.

Spe Int
Number of times the system parity error interrupt was received.

Isr Int
Number of interrupt service routine interrupts received.

Spur Int
Number of spurious interrupts received.

Rcv Len Violations
Number of received length violations.

Max Len Violations
Number of maximum length violations.

Fifo Over Runs
The number of first in first out overflows incurred.

Channel Deactivations
Number of times the SAR driver received deactivate indications from the SAR chip.

User Aborts
Accumulated user aborts.

Crc Errors
Number of Cylic Redundancy Check errors.

Sbe Int
Number of times a system bus error interrupt was received.

Mm Int
Number of times the mailbox modified interrupt was received, which means that a previous transmit command was completed or new packets have been received.

Rqa Int
Number of times the receive queue alert interrupt was received.

Rqu Int
Number of times the receive queue underrun interrupt was received.

Buffer Under Flow
Remaining capacity of the buffer.

Raw Cells
Total raw cells received.

Rcv Bytes
Total bytes received.

Rcv Pkts
Total packets received.

Switch Views

Table 10 lists the views available via the **Switch** selection on the Switching Application Icon Subviews menu.

Note:

The fields contained in most of these views provide double-click access to a Detail view that summarizes the data associated with the field. Some Detail views permit you to change parameters associated with the view.

Table 10: Switch Icon Subviews Menu Selections

Selection	Opens the...
Zeitnet Sys. Information	Zeitnet System Information View (Page 35)
Zeitnet Sys. Extensions	Zeitnet System Extensions View (Page 36)
Configuration	Switch Configuration View (Page 37)
Module	Module View (Page 38)
Port	Port View (Page 38)
Traffic Configuration	Port Traffic View (Page 39)
Alarm	Alarm View (Page 40)

Table 10: Switch Icon Subviews Menu Selections (Continued)

Selection	Opens the...
Alarm Configuration	Alarm Configuration View (Page 40)
Signaling Timer	Signaling Timer Table View (Page 41)
SAR	Switch Application Information View (Page 42)
Log	Log Table View (Page 43)
SSCOP Configuration	SSCOP Configuration Table View (Page 44)

Zeitnet System Information View

This view provides device configuration information and contains buttons that allow you to change the Flush UNI routes, ports, and status; Flush PVC ports and status; and LES status.

The view provides the following information:

Sys Software Version
The current software version of the device.

Mib Version
The current MIB version.

Common DRAM Size
The size of the common DRAM, in megabytes.

Total Heap Memory
The size of the total heap memory configured.

Software Type
The current software type; either PVC, SVC, or Server.

Flush UNI Routes
Clears all UNI routes on a particular port or all ports so configured.

CPU Speed
The CPU speed (MHz) of the switch board.

SAR Control Size
The size of the Segmentation and Reassembly (SAR) control memory.

Cell Memory Size
The current cell memory size setting.

Free Heap Memory
The percentage of free heap memory.

Flush PVC
Clears all PVCs created on a particular port or all ports so configured.

CPU DRAM Size
The size of the CPU DRAM, in megabytes.

Used Heap Memory
The size of the heap memory in use.

LES Status
Activates or halts the LES.

Power Supply 1 Status
The status of power supply 1.

Power Supply 2 Status
The status of power supply 2 (only for the ZX-250r).

Zeitnet System Extensions View

This view provides board, queue threshold, and address information and lets you change the administrative, management, and operational status for the switch.

The following fields are provided:

CPU Board Revision
The current CPU board revision of the device.

CPU Model
The CPU model type of the device.

Secondary Flash Type
The condition of the secondary flash; either asynchronous or synchronous.

Number of Switch Boards
The number of switch boards currently installed on the device.

Switch Admin Status
Setting this field to “Down” causes the device to reboot safely.

Switch Oper Status
Specifies whether the device is operational.

Queue Threshold 1
The value programmed into Queue Threshold Register 2, which is used to trigger Explicit Forward Congestion Indication (EFCI) cell marking in the device for priority Queue 2.

Queue Threshold 2
The value programmed into Queue Threshold Register 3, which is used to trigger Explicit Forward Congestion Indication (EFCI) cell marking in the device for priority Queue 3.

Queue Threshold 3
The value programmed into Queue Threshold Register 4, which is used to trigger Explicit Forward Congestion Indication (EFCI) cell marking in the device for priority Queue 4.

Queue Threshold 4
The value programmed into Queue Threshold Register 1, which is used to trigger Explicit

Forward Congestion Indication (EFCI) cell marking in the device for priority Queue 1.

Low End Threshold
The value programmed into the Watermark 1 Register, which is used to trigger low EPD (Early Packet Discard), EFCI, and backward resource management cell marking.

High End Threshold
The value programmed into the Watermark 2 Register, which is used to trigger low EPD.

Switch Discard Threshold
The value programmed as the threshold beyond which cells will be dropped due to the memory buffer being full.

Set Lock
Allows one Network Management System (NMS) to set this field to its own IP address, thereby locking out any other NMS from having write access to the device. The lock is released after five minutes. Any other NMS will have write access to the device when this field is set to zero.

Switch Set Lock Time
The time that is set when the NMS locks the device so that no other NMS has write access to the device. To continue to hold the lock, the NMS must reset before this value increments to the five minute limit.

GW NMS IP Address
The IP address of the gateway of the LEC on the device connected to the NMS.

Mgmt Status
Indicates whether the device forwards traps to the NMS. **1** means forwarded and **2** means not forwarded.

NMS IP Address
The IP address of the first NMS that is performing AutoDiscovery.

Hardware Version
The current version number of the device.

GW NMS ATM Address
The ATM address of the gateway NMS LEC.

Software Binary Image Size
The size of the software binary image, in bytes.

Switch Configuration View

This view provides the following configuration file information:

Ftp Server
The IP address of the FTP server where configuration files are stored.

Ftp Directory
The full path name of the directory where configuration files are stored.

Ftp Action
Initiates a backup or restoration of data from the repository in flash memory on the device. A value of 1 initiates a backup of all configuration data to the TFTP server, whereas a value of 2 initiates a restore of data.

Status
Shows the status of the last completed configuration data transaction.

Module View

This view shows the number and status of the modules in the following fields.

Num. of Modules
The number of modules currently installed on the device.

Index
The slot number of the module.

State
The state of the module identified by the index.

Port View

This view provides cell transmission information for each port in the following fields.

Num. of Ports
The number of ports on the device.

Port Number
The ATM port number.

Type
The type of port (UTP, fiber, single mode, etc.)

Epds
The total number of cells dropped on the port.

OAM Cells
The total number of operation and maintenance cells received on the port.

RM Cells
The total number of RM cells received on the port.

Invalid VCs
The total number of cells received on the port that had an invalid virtual channel number in the header.

Dropped Clp 1s
The number of cells with the Cell Loss Priority (CLP) bit set to 1 (and thus were dropped due to congestion).

Rcvd Clp 1s
The number of cells with the Cell Loss Priority (CLP) bit set to 1 that were received by the port.

Admin Status
The state of the port (“Up” or “Down”).

Port Traffic View

This view provides a table of traffic information in the following fields.

Min Q1 Counter
The number of cells reserved by the device in cell buffer memory for priority queue 1 on the port.

Min Q2 Counter
The number of cells reserved by the device in cell buffer memory for priority queue 2 on the port.

Min Q3 Counter
The number of cells reserved by the device in cell buffer memory for priority queue 3 on the port.

Min Q4 Counter
The number of cells reserved by the device in cell buffer memory for priority queue 4 on the port.

Max Q1 Counter
The number of cells received for priority queue 1 on the port after which the device will drop cells.

Max Q2 Counter
The number of cells received for priority queue 2 on the port after which the device will drop cells.

Max Q3 Counter
The number of cells received for priority queue 3 on the port after which the device will drop cells.

Max Q4 Counter
The number of cells received for priority queue 4 on the port after which the device will drop cells.

Port CAC
The Connection Admission Control (CAC) policy for the port. The values are: Conservative, Liberal, and Moderate.

CAC Avail. BW
The bandwidth available, in kilobytes.

CAC Total Alloc. BW
The total bandwidth allocated, in kilobytes.

CAC Cbr Alloc. BW
The Constant Bit Rate (CBR) bandwidth allocated, in kilobytes.

CAC RtVbr Alloc. BW
The Real Time Variable Bit Rate (RT-VBR) bandwidth allocated, in kilobytes.

CAC NrtVbr Alloc. BW
The Non Real Time Variable Bit Rate (NRT-VBR) bandwidth allocated, in kilobytes.

CAC Ubr Alloc. Bw
The Unspecified Bit Rate (UBR) bandwidth allocated, in kilobytes.

Alarm View

This view provides alarm message information as follows:

Index
The alarm message index identification.

Message
The alarm message identification.

Module Name
The module name of the alarm message originator.

Sub Module Name
The name of the submodule where the alarm message originated.

Time
The time the alarm message occurred.

Sequence Number
The sequence number of the alarm message.

Severity
The alarm message severity.

Status
Validates or clears the alarm.

Alarm Configuration View

This view lists the location and number of alarm files. The view provides the following information:

Index
The alarm message index identification.

Directory
The name of the alarm directory where all alarm files are stored in flash memory.

File
The name of the alarm configuration file where all configuration information about alarms is stored.

Alarm File
The name of the file that actually stores the file.

Total Alarm Files
The total number of alarm files.

Starting File Num
The starting alarm file number.

Files Used
The number of alarm files being used.

Logs Per File
The number of logged lines per alarm file.

Signaling Timer Table View

This view contains two tables: the Signaling Timer Table and the Signaling Retries Table.

Signaling Timer Table

The Signaling Timer Table provides the following information:

308 Timeout
The time, in seconds, the signaling entity will wait for a response to a RELEASE request using the T308 timer.

309 Timeout
The time, in seconds, the signaling entity will wait for a response to an SAAL RECONNECT request using the T309 timer.

310 Timeout
The time, in seconds, the signaling entity will wait for a response to a CONNECT/RELEASE after receiving an incoming CALL PROCEEDING indication using the T310 timer.

313 Timeout
The time, in seconds, the signaling entity will wait for a CONNECT RESPONSE to a CONNECT REQUEST using the T313 timer.

316 Timeout
The time, in seconds, the signaling entity will wait for a response to a RESTART request using the T316 timer.

317 Timeout
The time, in seconds, the signaling entity will wait for a response to a RESTART request using the T317 timer.

322 Timeout
The time, in seconds, the signaling entity will wait for a response to a STATUS request using the T322 timer.

398Timeout
The time, in seconds, the signaling entity will wait for a response to a DROP PARTY request using the T398 timer.

399 Timeout
The time, in seconds, the signaling entity will wait for a response to an ADD PARTY request using the T399 timer.

400Timeout
Starts a timer when the User Side Signaling entity sends a UserSetupInd message to an appropriate user. It expects the user side to respond with a CallClearReq or a ConnectReq message before this timer expires. Otherwise, the call is released and the associated resources are released.

401Timeout
Starts the 401 timer and Add Party Indication, which is sent to the upper layer protocols.

Signaling Retries Table

This table contains 11 columns of “Retries” data corresponding to the 11 columns of Timeout data contained in the Signaling Timer Table (described above). Each field provides the number of retries for the corresponding Timer.

Switch Application Information View

This view provides the following quantitative data about cell and packet transmission and receive errors.

Rcv Packets
The total packets received.

Rcv Bytes
The total bytes received.

Raw Cells
The total raw cells received.

Crc Errors
The current total number of Cyclic Redundancy Check errors.

User Aborts
The accumulated user aborts.

Rcv T1 Errors
The accumulated T1 errors received.

Tx Packets
The number of packets that completed transmission.

Tx Packets Queued
The number of packets queued for transmission.

Tx Bytes
The total number of bytes that completed transmission.

Tx Packets Dropped
The number of packets dropped.

Buffer Underflow
The buffer underflow.

Fifo Overflow
The first-in/first-out overflow.

Max Length Violations
The number of maximum length violations.

Rcv Length Violations
The number of length violations received.

Rcv Channel Deactivations
The number of times the Segmentation and Reassembly (SAR) driver received deactivate indications from the SAR chip. These

deactivations are received when a virtual circuit channel is about to be closed.

Spur Int
The number of spurious interrupts received.

Total Errors
The total number of errors received.

Rcv ISR Int
The total number of Interrupt Service Routine interrupts received.

Rcv RQU Int
The number of times the receive queue ran out of buffers.

Rcv RQA Int
The number of times the Receive Queue Alert interrupt was received, indicating that the receive queue is running low on buffers.

Rcv MM Int
The number of times the Mailbox Modified interrupt was received, indicating that a previous transmit command completed or new packets were received.

Rcv MF Int
The number of times the transmit or receive mailbox became full due to insufficient driver processing speed.

Rcv SBE Int
The number of times a system bus error occurred.

Rcv SPE Int
The number of times a system parity error interrupt was received.

Rcv CPE Int
The number of times a control memory parity error interrupt was received.

Rcv PI Int
The number of times the physical layer chip generated an interrupt, such as when a cable is pulled out or inserted.

Rcv RD Int
The number of times the receiver was deactivated.

Rcv RCR Int
The number of times the Raw Cell Received interrupt was received.

Log Table View

This view provides a table of the log messages that have occurred on each port. It also provides the module and submodule name of the message originator and the time that each log message occurred. The vertical scroll bar located in the center of the table allows you to view all of the messages. The number within parentheses beside

each message helps you identify the index number and its associated port.

SSCOP Configuration Table View

This table is used to view or modify the Service Specific Connection-Oriented Protocol (SSCOP) configuration. You can reset any field in this table. Double-click the field to access the Detail view. In the Detail view, click the field to position the cursor, and type the new value.

This table contains the following information:

Port Number
The SSCOP port number.

Max PD
The SSCOP maximum acceptable values for Virtual Tributary VT (PD) before sending a poll PDU and resetting VT (PD) to zero.

Max CC
The maximum value for the state variable VT (CC), corresponding to the maximum number of transmissions of a BGN, END, or RS PDU.

Timer Poll
Allows you to configure the polling interval for the SSCOP polling timer, in milliseconds.

Timer Keep Alive
Allows you to configure the SSCOP polling timer Keep-Alive value, in milliseconds.

Timer No Response
Allows you to set the timing interval for the SSCOP polling timer No-Response value, in milliseconds.

Timer CC
Allows you to set the SSCOP CC timer value, in milliseconds.

Tx Window Size
Allows you to set the SSCOP transmit window size.

Rcv Window Size
Allows you to set the SSCOP receive window size.

IISP Table View

This view is available via the **IISP Route** selection on the Switching Application Icon Subviews menu. The view includes a table of Interim Inter-Switch Signaling Protocol (IISP) information. This view contains the following information:

Index
A unique identifier for the entry in the table.

Address
The ATM address prefix.

Length
The length of the route address, in bits.

Port Number
The interface index of the outgoing link.

Weight
The weight value associated with this route.

Route State
Valid creates a new entry; **Invalid** deletes one.

Signaling Views

Table 11 describes each of the views available via the Signaling selection on the Switching Application Icon Subviews menu.

Table 11: Signaling Icon Subviews Menu

Menu Selection	Opens the ...
AutoDetect	AutoDetect Table (Page 46), which is used to enable and disable the auto detect feature on ports.
Uni Versions	UNI Versions Table (Page 46), which lists the supported UNI signaling versions for a port.
SNMP Community	Community Table (Page 46), which lists the community strings and is used for community authentication.
ILMI Status	ILMI Status Table (Page 47), which provides status information for a particular Interim Local Management Interface (ILMI) link.
Free VPI	VPI Table (Page 47), which contains the information about the first free VPI for each interface.
Free VCI	VCI Table (Page 47), which contains the information about the first free VCI, and contains entries for each of the VPI values associated with an interface.

Table 11: Signaling Icon Subviews Menu (Continued)

Menu Selection	Opens the ...
Type and Side	Type and Side Table (Page 47), which is used to set the default signal type and side user role (either network or user) table for a port.
Well Known Address	Well Known Address Table (Page 48), which is used to add and delete the mapping of Well Known addresses to the registered addresses.
Vcc Mask	VCC Mask Table (Page 48), which is used to add, modify, and delete the Virtual Channel Connection masks.
SNMP Trap Community	SNMP Trap Community Table (Page 48), which contains the SNMP trap community string used by the SNMP agent to send trap messages.

AutoDetect Table

Use this table to enable and disable the Auto Detect features on particular ports. This table contains the following information:

Port Number
Identifies the port number where the Auto Detect feature is enabled or disabled.

AutoDetect
Indicates whether the auto detect feature is enabled or disabled. Enabling allows the port to recognize the various versions of UNI signaling.

UNI Versions Table

This table lists the supported UNI signaling versions for the ports. This table contains the following information:

Port Number
Identifies the port number.

UNI Version
Defines the UNI signaling version used by the port.

Community Table

This table allows you to authenticate the SNMP community strings. It shows each SNMP community entry with the IP address of the SNMP manager and the privilege associated with that community. This table contains the following information:

Name
Identifies the specific SNMP community's name.

Ip Address
Identifies the specific SNMP community's IP address.

Privilege
Identifies the specific SNMP community's privilege.

Row Status
Used to create a new row or modify or delete an existing row in the table. Use the Row Status Procedure provided below the table to create and remove community strings.

ILMI Status Table

This table provides the following status information for a particular Interim Local Management Interface (ILMI) link.

Port Number
Identifies the ILMI port.

Oper Status
Indicates whether the ILMI link is "Up" or "Down."

Admin Status
Used to set the ILMI link status to "Up" or "Down." Double-click a link to access the Detail view. Use the **Admin Status** button on the Detail view to change the status.

VPI Table

This table provides the following information about the first free VPI for each interface.

Port Number
Identifies the port number.

VPI Value
Identifies the VPI value, which is zero when there are no VPI bits.

VCI Table

This table provides the following information about the first free VCI for each interface.

Port Number
Identifies the port number.

VCI VPI
Identifies the free VCI's VPI.

VCI Value
Identifies the VCI value, which is zero when there are no VCI bits

Type and Side Table

Use this table to set the default Signal Type and Side user role (either network or user) for a port. This table contains the following information:

Port Number
Identifies the port number.

Type
The default signaling type for the port.

Side
The default signaling side for the port.

Well Known Address Table

Use this table to add and delete the mapping of Well Known addresses to the registered address. This table contains the following information:

Well Known Address
The Well Known address.

Registered Address
The registered address corresponding to the Well Known address.

Type
The type (either “Static” or “Dynamic”) of the Well Known address. The default is Static.

ID
The identifier of the Well Known address.

Row Status
The row status. Use the Detail view and Row Status Procedure provided in the view to create and remove addresses.

VCC Mask Table

Use this table to modify VCC masks. (Currently, masks cannot be added or deleted.) This table contains the following information:

Index
The index of the VCC mask table.

VPI Mask
The VPI portion of the VCC mask.

VCI Mask
The VCI portion of the VCC mask.

SNMP Trap Community Table

This table contains the community string used by the SNMP agent to send trap messages. The table provides the following:

Index
The index of the table.

Name
The name of the SNMP community where the trap is sent.

IP Address
The IP address of the SNMP community where the trap is sent.

Row Status
The row status. Use the Detail view and Row Status Procedure provided in the view to create and remove addresses.

VLAN Views

Table 12 describes each of the views available via the VLAN selection on the Switching Application Icon Subviews menu.

Table 12: VLAN Menu Selections

Menu Selection	Opens the ...
LEC Data Direct	LEC Data Direct Connection View (Page 50), which is used to create a PVC connection to a particular destination.
LEC Statistics	LEC Statistics View (Page 50), which is a table of LAN Emulation Client (LEC) statistics.
LEC Address Translation	LEC Address Translation View (Page 51), which provides a table of LEC configuration information.
Traffic Descriptor	VLAN Traffic Descriptor View (Page 51), which provides a table that lists the user-configured traffic descriptors for each VLAN.
LES Configuration	LES Configuration View (Page 52), which provides a table of LAN Emulation Server configuration information.
BUS Configuration	BUS Configuration View (Page 52), which provides a table that lists the BUSs paired with the LESs found in the LES Configuration view.

LEC Data Direct Connection View

This view provides a table that is used to create a PVC connection to a particular destination by creating an entry in this table for the destination MAC address. This view contains the following information:

MAC Address
The destination MAC address for the data direct connection.

ATM Address
The destination ATM address for the data direct connection

Port
The port number where the data direct connection originates.

VPI
The Virtual Path Identifier for the data direct virtual channel.

VCI
The Virtual Channel Identifier for the data direct virtual channel.

Row Status
The row status. Use the Detail view and Row Status Procedure provided in the view to create and remove PVCs.

LEC Statistics View

This view provides the following LAN Emulation Client (LEC) statistics.

Last Change
The time when the interface entered its current operational state.

In Octets
The total number of octets received on the interface, including framing characters.

In Ucast Packets
The number of subnetwork unicast packets delivered to a higher layer protocol.

In Discards
The number of inbound packets that were discarded even though no errors were detected (which prevents delivery to a higher layer protocol).

In Errors
The number of inbound packets containing errors that prevented them from being delivered to a higher layer protocol.

In Unknown Pro
The number of packets received via the interface that were discarded because of an unknown or unsupported protocol.

In Mcast Packets
The number of multicast packets received via this interface.

In Bcast Packets
The number of broadcast packets received via the interface.

Out Octets
The total number of octets transmitted from this interface, including framing characters.

Out Ucast Packets
The total number of packets that higher layer protocols have requested for transmission to a subnetwork unicast address, including those that were discarded or not sent.

Out Discards
The number of outbound packets that were discarded(even though no errors were detected (which prevents transmission).

Out Errors
The number of outbound packets that could not be transmitted because of errors.

Out Mcast Packets
The number of multicast packets transmitted via the interface.

Out Bcast Packets
The number of broadcast packets transmitted via the interface.

LEC Address Translation View

This view provides the following LAN Emulation Client configuration information.

IP Address
The IP address of the client.

Subnet Mask
The subnet mask of the client.

Vlan Port
The port/link number where this instance of a Virtual LAN (VLAN) is to be created. This always refers to the CPU port in the case of ATM switches.

Admin Status
The desired state of the client. Change the state by double-clicking a field to access the Detail view and typing the new status (**Up** or **Down**). The default is **Down**.

VLAN Traffic Descriptor View

This view provides a table that lists the user-configured traffic descriptors for each VLAN. Default descriptors apply for all VLANs not

appearing in this table. This view contains the following information:

Index
The descriptor index.

Peak Rate
The peak cell rate through the VLAN.

Average Rate
The average cell rate through the VLAN.

Max Burst
The maximum burst rate through the VLAN.

LES Configuration View

This view provides the following LAN Emulation Server (LES) configuration information.

Connection Method
The connection method of the LES, which can be either PVC or SVC.

Distribute Method
The distribution method of the LES.

Multipoint
Indicates whether the LES is set for multipoint connections or not.

BUS Configuration View

This view provides a table that lists Broadcast and Unknown Server (BUS) configuration information. This view contains the following information:

Connection Method
The connection method of the BUS.

Max Frame Size
The maximum size of a data frame, as defined by the ATM Adaptation Layer (AAL5) Service Data Unit, that the LAN emulation service can guarantee to transmit without dropping the frame because it is too large.

Lan Type
The type of ATM emulated LAN for which this LES is providing service.

Multipoint
Indicates whether the BUS is set for multipoint connection.

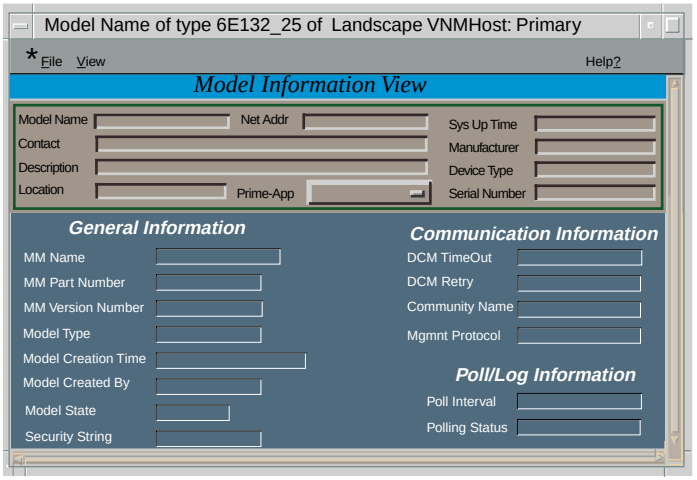
Model Information View

This section describes the Model Information view.

This view displays administrative information about the device and its applications and lets you set thresholds and alarm severity for the device.

Figure 7 shows a sample Model Information view. The layout of this view is the same for all model types but some information will vary depending on the model it defines. Refer to ***SPECTRUM Views*** for a description of this view.

Figure 7: Sample Model Information View



Index

A

AAL 29
AAL5 VCC 31
Address
  ATM 37
  Gateway 37
  Label 16
  MAC 15
  Neighbor 24
  NMS 37
  Physical 18
  Registered 48
  Translation 19
  Well Known 48
Admin Status 26, 27, 28, 29
Administrative Status 18
Alarm
  Configuration View 40
  State 25
  View 40
Alarm Discard Threshold 19
ATM Traffic 30
Auto Detect Features 46

B

Bandwidth
  Interface 18
Binary Image Size 37
Board Information 36
Buffer Memory 39
BUS (Broadcast & Unknown Server) 52

C

CAC 39
Call Proceeding 41
Cell
  Information 38
  Transmission 42
  Transmission Statistics 13
Channel Links 28
Channels 25, 28
Common DRAM 35
Community Names 46
Configuration 23
  Broadcast & Unknown Server 52
  File 37
  Interface 18, 23
  LES 52
Connection Admission Control (CAC) 39
CPU 36
  DRAM 35
CRC Errors 42
Cross Connect Id 29, 30
Cross Connect Views 25

D

Descr Type 30
DevTop View 14
Discards 17
Documentation 5
DRAM 35
DS3 PLCP 23

E

Encapsulation 29
Error Rate Threshold 19
Errors 31
  CRC 42
  Packets 17
  Receive 42
  Transmission 42

Index

F

Frames
Delivered 21
Forwarded 21
Transmitted 21
FTP Server 37

G

Gateway Address 37

H

H2L Last Change 26, 28
H2L Oper Status 26, 27
Hardware 6
Heap Memory 32, 35
High Index 26, 27
High VCI 26
High VPI 26, 27

I

IF Index 24, 25, 28, 29, 31
IISP 45
ILMI 47
ILMI VCI 24
ILMI VPI 24
Index 25, 27, 30
Interface 23
Description 18
Index 19
Label 15
Status of 15, 18
Type 15
Interface Icon, Device View
Administrative Status 15
Illustration 15
Interface Number label 15
Interface Type Label 15
Interrupts 43
IP Routing
Traffic Statistics 21

L

L2H Last Change 26, 27
L2H Oper Status 26, 27
LAN Type 52
Last Change 28, 30
LEC
Address Translation 51
Data Direct 50
Statistics 50
LES 35
Configuration 52
Links Views 28
Load Alarm Threshold 19
Log Messages 43
Loss of Cell Delineation 25
Loss of Frame 25
Low Index 26, 27
Low VCI 26
Low VPI 26, 27

M

MAC Address Label 15
Management Tasks 9
MIB Version 35
MIBs 6
Model
Information 53
Types of 7
Module Information 38
Multipoint 52

N

Neighbor Address 24
Network Management System
Address 37
Lockout 37

O

OCD Events 24
Operational Status 18, 28, 30

Index

Over Sized SDUs 32

P

Packet Size 18
Packet Threshold 19
Packet Transmission 42
Param 30
Path Links 29
Paths 25, 28
Performance Statistics 12, 16
PNNI Node 22
Port
  CAC 39
  Configuration 23
  Information 38
  Traffic 39
Power Supply Status 36
Provides Relation 21
PVC 35

Q

Quality of Service 31
Queue Threshold 36

R

Rcv Descr Index 29, 30
Receive
  Errors 42
  Size 29
Reconnect Request 41
Registered Address 48
Release Request 41
Restart Request 41
Restricted Rights Notice 2
Routing
  Application 21
  Statistics 13
Row Status 27, 28, 29, 30, 31

S

SAR (Segmentation & Reasembly) 35, 42
Secondary Address Panel 19
SEFSs 25
Set Lock 37
Signal Type and Side 47
Signaling
  Retries 42
  Timer 41
  Views 45
  VNI 46
SNMP Community 46
SNMP Traps 48
Software Information 35
SSCOP 44
Statistics
  Cell Transmission 13
  MIB II Frame Transmission 13
  Routing Frame Transmission 13
Status Request 41
Switch
  Status 36, 37
  Views 34
Switching Application 22
System Information 35

T

TC Alarm State 25
TC Sublayer 23
Thresholds 19, 37
Time Outs 32
Timers 41
Topology 14
Trademarks 2
Traffic Parameters 30
Transmission
  Errors 42
  Statistics 13, 17
Transmit Size 29
Troubleshooting 9

U

UASs 25
UNI 35

UNI Signaling Version 46

V

VC Cross Connect 25
VCC 24
VCC Mask 48
VCI 24, 28, 31, 47
Virtual
    Channel Links 28
    Channels 25, 28
    Paths 25, 28
Virtual Path Links 29
VLAN 49
VLAN Traffic Descriptors 51
VP Cross Connect 27
VPC 23
VPI 28, 29, 31, 47

W

Well Known Address 48

X

Xmit Descr Index 29, 30